



**SW BI101**

**Cardinal Business Intelligence Reporting  
Overview**

Web Based Training



# Welcome to Cardinal Training

This training provides participants with the skills and information necessary to use Cardinal and is not intended to replace existing Commonwealth and/or agency policies.

This course, and the supplemental resources listed below, are located on the Cardinal website ([www.cardinalproject.virginia.gov](http://www.cardinalproject.virginia.gov)) under Training.

Cardinal Reports Catalogs are located on the Cardinal website under Resources:

- Instructor led and web based training course materials
- Job aids on topics across all functional areas
- Variety of simulations
- Glossary of frequently used terms

The Cardinal screenshots included in this training course show system pages and processes that some users may not have access to due to security roles and/or how specific responsibilities relate to the overall transaction or process being discussed.

For a list of available roles and descriptions, see the Statewide Cardinal Security Handbook on the Cardinal website in the Security section under Resources.



# Course Objectives

After completing this course, you will be able to:

- 1 Understand the purpose of Cardinal Business Intelligence
- 2 Understand the functionality of a dashboard and a report
- 3 Log into Cardinal Business Intelligence
- 4 Use the Global Header
- 5 Understand prompts and use prompt capabilities to filter report data
- 6 Understand hierarchy drilldowns and guided navigation between dashboard pages



## Course Objectives (continued)

- Understand available report features
- Understand the different report and graph types
- Manipulate report columns on a dashboard
- Use different print and export options
- Set default prompts on a dashboard page
- Set a landing page



# Course Objectives (continued)



Clear personalization



Find Cardinal Business Intelligence Help



# Agenda

1

Cardinal Business Intelligence Basics

2

Dashboards and Reports

3

Personalization and Finding Help



# Lesson 1: Introduction

1

## Cardinal Business Intelligence Basics

This lesson covers the following topics:

- Cardinal Business Intelligence Overview
- Logging Into Cardinal Business Intelligence



# Cardinal Business Intelligence Overview

The Cardinal Business Intelligence (BI) Solution is a tool created using Oracle Business Intelligence Enterprise Edition (OBIEE) that:

- Provides easy access to Cardinal information across a wide range of audiences through self-service reporting and analysis (General Ledger, Accounts Payable, Employee Expenses, and Accounts Receivables information).
- Empowers executive, managerial, and select agency operational staff to make data driven, fact-based decisions using Key Performance Indicators (KPIs) focused on outcomes.
- Provides transparent access to data.

This web based training teaches the navigation and general use of the Cardinal BI Solution and is not specific to the Cardinal system. For more detailed information about Cardinal BI, see the Job Aids located on the Cardinal website in **Job Aids** under **Training**.

**Note:** There is typically a one day interval between the time the data is posted in Cardinal and the time the data is posted in BI. The BI data is refreshed from the Cardinal system nightly and does not reflect real time information.



# Dashboard and Report Overview

Cardinal Business Intelligence (BI) is made up of many **Dashboards**, **Dashboard Pages**, and **Reports**.

A **Dashboard** is a structure that organizes analytical content (e.g., General Ledger, Accounts Payable, Accounts Receivable, and Employee Expenses). The content on a **Dashboard Page** (e.g., reports, links, visualizations) is usually displayed as one or more reports.

In the below example, the **General Ledger Dashboard** is displayed with the **Expenditures by Account Dashboard Page** (tab) selected. This **Dashboard Page** is used to review the **Expenditures by Account Report**.

The screenshot displays the 'General Ledger' dashboard in Cardinal Business Intelligence. The 'Expenditures by Account' tab is selected. The interface includes filters for Fiscal Year (2017), Secretariat Level Name, and Agency Description. A large box displays the total 'Actual Expenditures' as \$28,474,507,733. The ETL Run Date is 15-MAR-2017.

* Fiscal Year	Secretariat Level Name	Agency Description
2017	--Select Value--	--Select Value--

Select by Agency Code

**\$28,474,507,733**  
Actual Expenditures

ETL Run Date: 15-MAR-2017

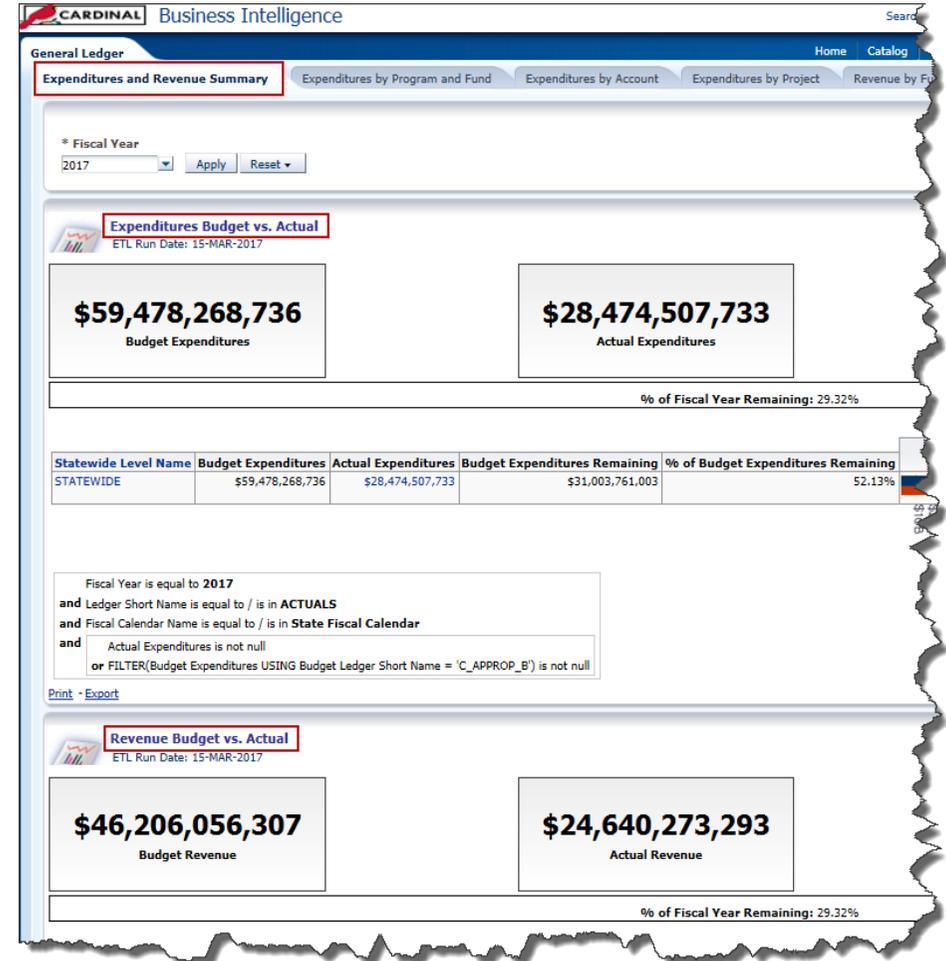


# Dashboard and Report Overview (continued)

In BI, a **Report** is an analysis displayed as a table or visualization based on a data set. There can be multiple reports placed on one **Dashboard Page**.

In this example, the two **Reports** on the **Expenditures and Revenue Summary Page** (tab) are:

- **Expenditures Budget vs. Actual**
- **Revenue Budget vs. Actual**



Click on image to enlarge



# Logging In

Access the Cardinal BI Solution logon page using the following link:

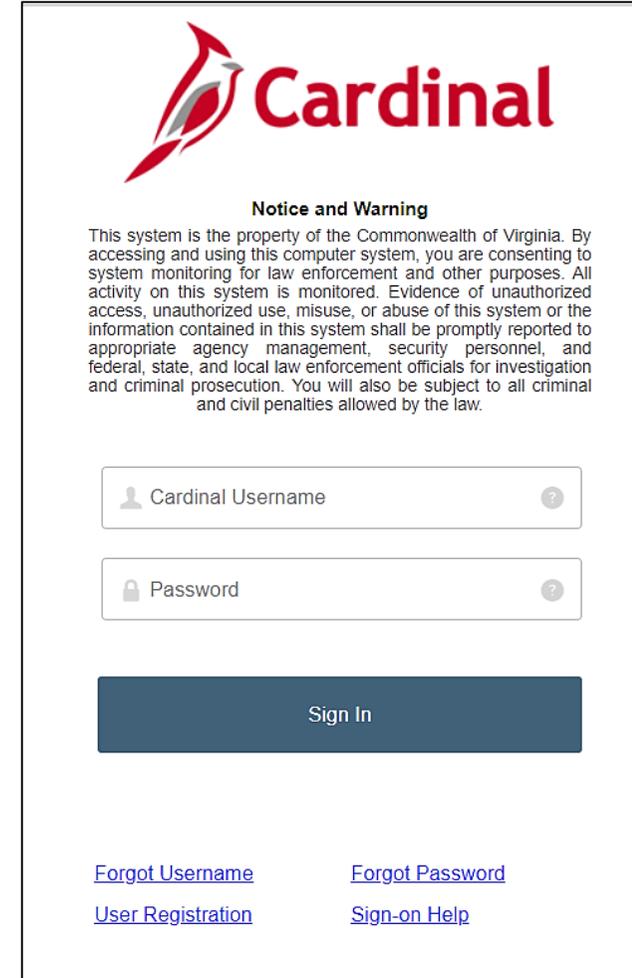
[my.cardinal.virginia.gov](https://my.cardinal.virginia.gov)

From the logon page, enter your **User ID** and **Password**.

**User ID:** Your User ID for Cardinal BI is the same as your Active Directory account User ID.

**Note:** Your User ID is based on first name and last name only. Use firstname.lastname as the User ID and exclude “@agencyname.virginia.gov”.

**Password:** Cardinal BI uses the same password as your Active Directory account password.



The screenshot shows the login interface for the Cardinal BI system. At the top left is the Cardinal logo, a stylized red and white cardinal bird. To its right is the word "Cardinal" in a bold, red, sans-serif font. Below the logo and name is a section titled "Notice and Warning" in a smaller, bold font. The notice text states that the system is the property of the Commonwealth of Virginia and that users consent to monitoring and reporting of unauthorized activity. Below the notice are two input fields: "Cardinal Username" with a person icon and a help icon, and "Password" with a lock icon and a help icon. A dark blue "Sign In" button is positioned below the fields. At the bottom of the page are four links: "Forgot Username", "Forgot Password", "User Registration", and "Sign-on Help", all in blue text.



# Global Header

Once logged in, the **Global Header** provides quick access to commonly used functions:

- **Dashboards:** Links to all Dashboards that are available to the user (this is the primary way to navigate through the Cardinal BI Solution).
- **Signed In As:** Displays the username and links to **My Account**, for specific preferences.
- **Sign Out:** Click this link to sign out of Cardinal BI.





# Announcements Overview

Below the Global Header, the **Announcement Overview** page displays with the following sections:

- **Announcements**
  - System outages, system upgrades, and important information related to the BI system.
- **Background**
  - Cardinal system and Cardinal BI Information.
- **Information**
  - Links to each of the subject area Dashboards and Dashboard pages. For example, click on the “Expenditures and Revenue” link and see the details for the 7 Dashboard pages related to expenditures and revenue.
- **Disclaimer**
  - Statement that defines risk and responsibility for any user of the BI system.
- **Related Sites**
  - Links to other related websites.



# Announcements Overview (continued)

The **Information** section of the **Announcements Overview** page provides access to the following links:

- **Expenditures and Revenue**
- **Employee Expenses**
- **Supplier Payments**
- **Receipts**
- **Procurement (VDOT Only)**

Clicking on a link in the **Information** section displays the list of Dashboard pages related to that link.

Users can click on any Dashboard page link and view the report(s) on that dashboard page.

**CARDINAL** Business Intelligence

Search All

Advanced Administration Help Sign Out

Home Catalog Favorites Dashboards New Open Signed In As PPS\_DANIEL.WALSH

**CARDINAL** **BUSINESS INTELLIGENCE**  
A Bird's Eye View of the Commonwealth of Virginia's Financial Activity

### Announcements

New Procurement dashboard and reports added for VDOT (Agency 50100). On June 16, 2016 the Cardinal BI application, a new solution designed to help you gain insight into Cardinal financial transactional data, was released to Cardinal users for The Virginia Department of Transportation (VDOT) and the Department of Accounts (DOA). Effective July 18, 2016 a Procurement dashboard has been added to the Cardinal BI application. Login to Cardinal BI and view reports and graphs related to VDOT purchase orders and spend transactions by category, supplier or item. You can also view reports related to contracts and buyers.

### Background

The Commonwealth of Virginia's state government is comprised of approximately 280 Executive Branch agencies responsible for everything from road construction to professional licensing, from prison administration to university research. Since 2011, the Commonwealth has been transitioning agencies onto the new Cardinal system in a phased approach. As of February 1, 2016, all agencies have transitioned to the Cardinal system.

Cardinal Business Intelligence, or Cardinal BI, is an extension of the Cardinal system, designed to provide better visibility, openness, and accessibility to financial activities across the Executive Branch agencies of the Commonwealth. The application provides tools and information to help you visualize key information at a summarized level. It also gives you the ability to drill down to more detailed subcategories and even more specific data. The Cardinal BI application interfaces directly with Cardinal each night to enable timely analysis for your business needs. Cardinal BI currently covers General Ledger, Accounts Payable, Employee Expenses and Accounts Receivable Deposit areas for all Executive Branch agencies. There is also an additional Procurement area for VDOT (Agency 50100).

\*Click [here](#) to view data availability for each agency and subject area.

### Information

**Expenditures & Revenue**  
Curious to see how the Commonwealth spends money and if it meets budget expectations? See how the money is spent, down to the specific transaction.

**Employee Expenses**  
Commonwealth employees incur expenses on behalf of the state government. View the details behind those expenses.

**Supplier Payments**  
Do you ever wonder where the agencies are spending dollars? Track where all payments are going.

**Receipts**  
Commonwealth agencies receive payments from individuals, companies and other agencies. Learn more about funds coming into the commonwealth.



# Lesson 1: Checkpoint

Now is your opportunity to check your understanding of the course material.

Read the question on the next slide(s), select answer(s) and click **Submit** to see if you chose the correct response.



In Cardinal BI, a \_\_\_\_\_ displays analytical content in the form of multiple reports

- Web page
- Dashboard Page
- Analysis
- Catalog

You can log into the Cardinal Business Intelligence Solution with your Active Directory account User ID and Password.

- True
- False

Which links are available in the Global Header?

- Home, Dashboards, New, Signed In As
- Dashboards, Signed In As
- Open, Home, Dashboards
- Home, Catalog, Dashboards, New, Signed In As



# Lesson 1: Summary

1

## Cardinal Business Intelligence Basics

In this lesson, you learned:

- The Cardinal BI Solution is an OBIEE tool used to provide transparent and easy access to Cardinal information across a wide range of audiences through self-service reporting and analysis.
- Cardinal BI is made up of Dashboards and Reports. Each Dashboard will have at least one Report.
- Log into Cardinal BI through [my.cardinal.virginia.gov](http://my.cardinal.virginia.gov) with your Active Directory User ID and Password.
- The Global Header and Announcements page allows easy access to important links.



# Lesson 2: Introduction

2

Dashboards and Reports

This lesson covers the following topics:

- Navigation
- Prompts
- Report features
- Report types
- Exporting and printing



# Navigation

The **Dashboards** button is the key navigational link, allowing movement from one subject area to another in order to view different Reports.

Dashboards are organized by subject areas; a logical grouping of similar content and information (e.g., Accounts Payable, Accounts Receivables, Employee Expenses, and General Ledger).

A list of all the available subject area Dashboards can be found under the **Dashboards** link on the Global Header.

For example, to see **General Ledger Reports**, use the following path:

**Dashboards > Cardinal > General Ledger**





## Navigation (continued)

Once a subject area is selected from the drop-down list, the Report(s) on the first Dashboard of that subject area will run based upon predefined prompt values. In the example below, the **Accounts Receivable** subject area was selected.

Navigate between the Dashboard pages within the subject area by clicking on the individual tabs. Each Dashboard page (tab) will then display the corresponding Reports. In the example below, **Agency Deposit Overview** and **Customer Deposit Overview** are the different Dashboards within the **Accounts Receivable** subject area.

Most Reports can be accessed through a Dashboard page. This is the primary method of navigation in Cardinal BI.





# Prompts

Reports are run with default criteria. Prompt criteria can be changed. For example, most Dashboard pages are defaulted to show Reports from a statewide perspective. Use prompts to narrow the reporting results to a specific agency.

## Prompts

- Available at the top of each Dashboard page.
- Allow you to filter the Dashboard to smaller increments of data.
- Once applied, the Report for that Dashboard will reflect the newly queried selections.
- Many Dashboard pages default prompt values. However, these defaults can be changed.

**Constrained Prompts** limit all other prompt values. For example, if an agency number is used as a constrained prompt, the Program prompt only shows programs for that agency. A prompt selection may not display because a previously constrained prompt value eliminated it as a choice.

The example below displays the following prompts:

**Fiscal Year**                      **Secretariat Level Name**  
**Agency Description**        **Program Level 30 Code**

The screenshot shows a prompt interface with four dropdown menus, each highlighted with a red box. The first dropdown is labeled '\* Fiscal Year' and has the value '2017'. The second is labeled 'Secretariat Level Name' and has '--Select Value--'. The third is labeled 'Agency Description' and has '--Select Value--'. The fourth is labeled 'Program Level 30 Code' and has '--Select Value--'. Below the dropdowns is a checkbox labeled 'Select by Agency Code' which is currently unchecked. To the right of the checkbox are two buttons: 'Apply' and 'Reset' with a small downward arrow.



## Prompts (continued)

An asterisk (\*) indicates that the prompt is a required field and a selection must be made.

After selecting prompt values, click the **Apply** button to run the report.

**Note:** Pressing **Enter** does not apply prompt values to the Dashboard.

The **Reset** button provides three options:

**Reset to last applied values:** resets all prompt values to the most recently run values

**Reset to default values:** resets to default prompt values for that Dashboard page

**Clear All:** clears all prompt values

\*Fiscal Year

2017 ▼

Apply

Reset ▼

- Reset to last applied values
- Reset to default values
- Clear All



# Types of Prompts

There are different types of prompts that allow different user input options. The Cardinal BI prompt types include:

- Radio Buttons
- Checkboxes
- Choice Lists
- Text Fields
- Sliders

Some prompts allow you to **Select One** value, while other prompts allow you to **Select Multiple** values.

**Select One**

**Project Category**  
BRDG

- NULL
- 1CTY
- AIRP
- BRDG
- BUSS
- CAPITAL
- CAPOUT
- CIBF

Search...

**Select Multiple**

**\* Fiscal Year**  
2013;2014

- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- Unspecified



# Auto-Complete

Auto-Complete suggests and highlights matching prompt values as the user types in the prompt selection field. In the example below, typing the word **Virginia** caused only those agencies that contain the word Virginia to display in the **Agency Description** prompt.

The screenshot shows a web application interface with a search field containing the text "Virginia". Below the search field, a dropdown menu is open, displaying a list of agencies. The word "Virginia" is highlighted in yellow in each list item. The list includes:

- Virginia Code Commission
- Virginia Commission on Youth
- Virginia Disability Commission
- Virginia Housing Commission
- Virginia Museum of Fine Arts
- Virginia Parole Board
- Virginia Racing Commission
- Virginia Tourism Authority

The interface also shows tabs for "Expenditures by Program and Fund" and "Expenditures by Account", and a search bar at the bottom with the text "Search...".



# Searching Prompts

Often the list of values within a prompt is very extensive. Cardinal BI has an automatic search feature that reduces the number of prompt values as a value is typed.

Use the **More/Search** feature if the exact value is not known or to choose more than one value.

A screenshot of a software interface showing a dropdown menu titled "Agency Description". The menu is currently open, displaying a list of agency names, each preceded by an unchecked checkbox. The list includes: "Admin of Health Insurance", "Agricultural Council", "Agriculture & Consumer Svcs", "Alcoholic Beverage Control", "Appropriation Vetoes", and "Attorney General & Dept of Law". At the bottom of the list, there is a button labeled "More/Search...". A red rectangular box highlights this button, and a red arrow points from the text above to this box. The dropdown menu also features a scrollbar on the right side and a "--Select Value--" header at the top.



# Searching Prompts (continued)

Once the **Search...** button has been selected, the **Select Values** window shown below displays.

Select the type of search: **Starts, Contains, Ends, is Like (pattern match)**.





# Searching Prompts (continued)

After a search type is chosen, enter the search criteria (in this example “Dept”). Move the selected items to the **Selected** box via the **Move** or **Move All** arrows.

The image shows two overlapping 'Select Values' dialog boxes. The top-left dialog has a search criteria of 'Dept' and a list of 15 items. The bottom-right dialog has the same search criteria, but the 'Selected' box now contains 'Dept for Aging & Rehab Svcs'. The 'Move' arrow between the two dialog boxes is highlighted with a red box.

**Available**

Name Starts Dept

Match Case

- Dept Behavioral Health/Develop
- Dept Conservation & Recreation
- Dept Mines Minerals & Energy
- Dept for Aging & Rehab Svcs
- Dept for Blind/Vision Impaired
- Dept for Deaf & Hard-of-Hearng
- Dept of Accounts Transfer Pmts
- Dept of Corr - Central Admin
- Dept of Corr - Div of Inst
- Dept of Corr - Institutions
- Dept of Criminal Justice Svcs
- Dept of Ed Central Operations
- Dept of Emergency Management
- Dept of Environmental Quality
- Dept of Game & Inland Fish
- Dept of Health Professions

**Selected**

Dept for Aging & Rehab Svcs

OK Cancel



## Searching Prompts (continued)

Select **OK** to finish, the selected item appears in the prompt field.

**Agency Description**

Dept for Aging & Rehab Svcs ▼

Select by Agency Code

**Apply** **Reset ▼**

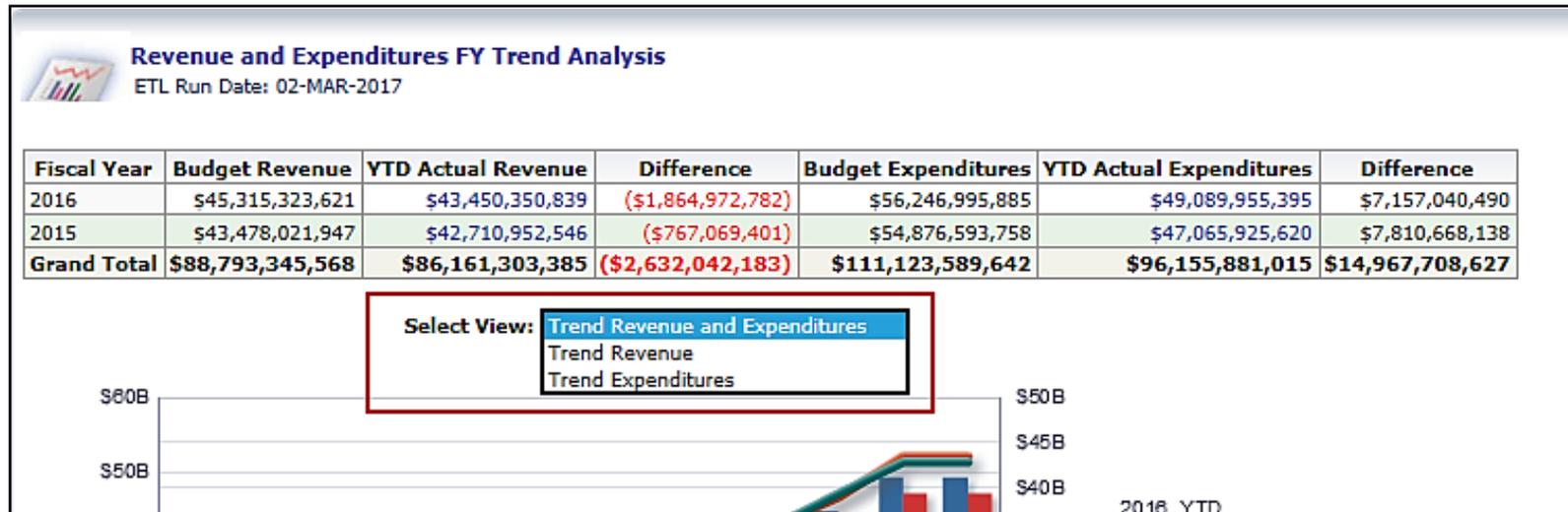


# Report Features

**Select View** is a drop-down list to select a specific view of the results.

In this example, the **Select View** allows the following options:

- Trend Revenue and Expenditures
- Trend Revenue
- Trend Expenditures





# Report Features (continued)

**Column selector:** a set of drop-down lists that contain pre-selected columns. Select columns and change the data that is displayed in the views of the analysis as needed.

In the example below, the column selector provides the option to select and view the **Budget Amount** or the **Transaction Amount** in the analysis.

Budget Amount	
Date - Fiscal Calendar	Budget Amount
▷ 2010	\$40,145,622,094
▷ 2011	\$13,533,265,591
▷ 2012	\$19,872,485,628
▷ 2013	\$29,638,633,311
▷ 2014	\$66,761,352,518

Transaction Amount	
Date - Fiscal Calendar	Transaction Amount
▷ 2011	\$0
▷ 2012	(\$2,649,380)
▷ 2013	\$16,544,541
▷ 2014	\$0



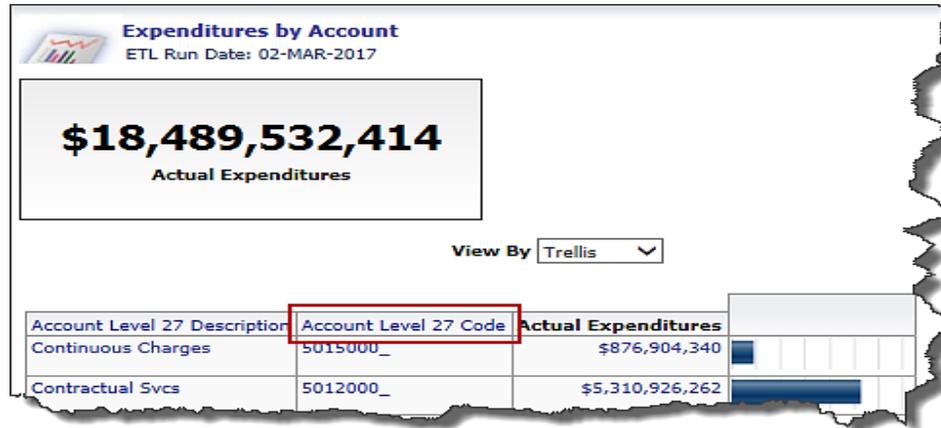
# Drilldowns

Cardinal BI allows drilling down on a column for more detailed information. The most common drilldown is a **hierarchical column** (or **hierarchy**). A **hierarchy** is a column that drills down into more specific information for a certain number of pre-established levels.

For example, the Expenditures by Account Report displays information starting at Level 27. Click on column header **Account Level 27 Code** to drill down to **Account Level 26 Code**.

While drilling down from level to level, always select the farthest “Account Level Code” column to the right to keep columns in order.

The number of drilldown levels varies for each Report. Some Reports may only have two levels to drilldown and others may have three, four, or five levels. Drilldowns are based on pre-established levels.





# Drilldowns (continued)

Continue to drill down on the **Account Level 26 Code** until **Account Level 25 Code** is displayed. For more detailed information about Levels and how they relate to Program, Fund, and Account, see the Job Aid titled **Business Intelligence – Drilldown – Levels for Statewide, Program, Fund, and Account** located on the Cardinal website in **Job Aids** under **Training**.

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Actual Expenditures
Continuous Charges	5015000_	Cap Lease Pay	CAP_LEASE_PAYMENTS	\$8,692,114
Continuous Charges	5015000_	Indirect Cost	CC_IDC_INT_AGY	(\$15,835,220)

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Account Level 25 Description	Account Level 25 Code	Actual Expenditures
Continuous Charges	5015000_	Cap Lease Pay	CAP_LEASE_PAYMENTS	Building Capital Leases	5015250	\$2,890,688
Continuous Charges	5015000_	Lease Pay	CAP_LEASE_PAYMENTS	Central Processor Cap Leases	5015220	

## Drilldown

### Introduction



In addition to drilling down on a hierarchical column (or hierarchy) based on the column heading, you can drill down on a specific code or description. This will show an example of using drilldown.

Please refer to the **Drilldown on Account Levels Job Aid** on the Cardinal website for additional information using the following navigation path:

**Cardinal Website > Statewide Toolbox > Job Aids > Business Intelligence Reporting**

Drilldown - Account Level 27

Drilldown - Account Level 26

Drilldown - Account Level 25



# Guided Navigation

**Guided Navigation** allows movement from one Report to another Report with selected information from the first Report passed through to the second Report.

Any number that appears as a hyperlink signifies that it is possible to use this data to navigate to another Dashboard or Report.

When clicking on the hyperlinked data, a button appears with the report name on it (e.g., Expenditure by Account and Program). Clicking this button allows the information from that cell to be passed to the next Dashboard or Report.

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,926,262
Equipment	5022000_	\$158,985,844
Indirect Cost	IDC	\$3,538,433

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,926,262
Equipment	5022000_	\$158,985,844
Indirect Cost	IDC	\$3,538,433

Expenditures by Account and Program

Click on image to enlarge



# Guided Navigation (continued)

Clicking on the report name opens another Report that has the information that was passed on. For example, clicking the **Expenditure by Account and Program** button from the \$876,904,340 cell displays the **Expenditure by Account and Program** Report with Fiscal Year, Secretariat, Agency Code, and Dollar Amount passing through from the **Expenditures by Account** Report.

**Guided Navigation** allows movement between Dashboards or Reports easily without having to input specific prompt criteria to find specific information.

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,900
Equipment	5022000_	\$158,985,844
Indirect Cost	5030000_	\$3,538,433

**Expenditures by Account and Program**  
ETL Run Date: 02-MAR-2017

Account Description	Account Code	Program Level 29 Description	Program Level 29 Code	Actual Expenditures
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Academic Support	1040_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Institutionl Support	1060_	\$662
Chrg Crd Purch Continuous Chrg	5015090	Operatn Secure Correctionl Fac	3980_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Administrative & Support Svcs	5990_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Defense Preparedness	7210_	\$11
Aircraft Insurance	5015110	Fin Asst-Educationl&Genrl Svcs	1100_	\$1,628
Aircraft Insurance	5015110	Law Enforcemnt&Hwy Safety Svcs	3100_	\$288,563
Aircraft Insurance	5015110	Unlncur Mainten&Rpl Operatns	6040_	\$0

**Expenditures by Account and Program**

Click on image to enlarge



# Navigating With Breadcrumbs

Breadcrumbs identify your current location in Cardinal BI and to view the path used to get there.

Breadcrumbs are active links that can be used to navigate back through to the original starting point.

\* Fiscal Year: 2017 | Secretariat Level Name: --Select Value-- | Agency Description: --Select Value--  
 Select by Agency Code [Apply] [Reset]

**Expenditures by Account**  
 ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
 Actual Expenditures

View By: Trellis

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,901,246
Contractual Svcs	5012000_	\$5,310,912,345
Equipment	5022000_	\$158,985,844
Indirect Cost	IDC	\$3,538,433
Obligations	5031000_	\$569,460,155
Personal Services	5011000_	\$3,503,829,100
Plant and Improvement	5023000_	\$960,212,397
Property and Improvmnt	5021000_	\$107,542,670
Supplies and Materials	5013000_	\$530,761,500
Transfer Payments	5014000_	\$6,467,371,712

Fiscal Year is equal to 2017  
 and Ledger Short Name is equal to / is in ACTUALS  
 and Fiscal Calendar Name is equal to / is in State Fiscal Calendar  
 and Account Level 28 Code is equal to / is in EXP\_PROGRAM  
 and Actual Expenditures is not null

[Print](#) - [Export](#)



# Navigating With Breadcrumbs (continued)

In this example, we have navigated to the **Expenditures by Account and Program Report**. The breadcrumbs are highlighted.

**Expenditures by Account and Program**  
ETL Run Date: 02-MAR-2017

Account Description	Account Code	Program Level 29 Description	Program Level 29 Code
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Academic Support	1040_
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Institutionl Support	1060_
Chrg Crd Purch Continuous Chrg	5015090	Operatn Secure Correctionl Fac	3980_
Chrg Crd Purch Continuous Chrg	5015090	Administrative & Support Svcs	5990_
Chrg Crd Purch Continuous Chrg	5015090	Defense Preparedness	7210_
Aircraft Insurance	5015110	Fin Asst-Educationl&Genrl Svcs	1100_
Aircraft Insurance	5015110	Law Enforcemnt&Hwy Safety Svcs	3100_
Aircraft Insurance	5015110	Hwy Sys Maintenance & Operatns	6040_
Aircraft Insurance	5015110	State Aircraft Flight Operatns	6560_
Aircraft Insurance	5015110	Administrative & Support Svcs	7990_
Aircraft Insurance	5015110	HE Auxilliary Enterprises	8090_
Automobile Liability Insurance	5015120	Higher Education Instruction	1010_
Automobile Liability Insurance	5015120	Higher Education Research	1020_
Automobile Liability Insurance	5015120	Higher Education Public Svcs	1030_
Automobile Liability Insurance	5015120	Higher Ed Academic Support	1040_
Automobile Liability Insurance	5015120	Higher Education Student Svcs	1050_
Automobile Liability Insurance	5015120	Higher Ed Institutionl Support	1060_
Automobile Liability Insurance	5015120	Operation & Maintenance-Plant	1070_
Automobile Liability Insurance	5015120	Fin Asst-Educationl&Genrl Svcs	1100_
Automobile Liability Insurance	5015120	HE Acad, Fiscal&Facility Plan	1110_
Automobile Liability Insurance	5015120	Museum and Cultural Services	145_
Automobile Liability Insurance	5015120	Residential Support	198_
Automobile Liability Insurance	5015120	Administrative & Support Svcs	199_
Automobile Liability Insurance	5015120	Law Enforcemnt&Hwy Safety Svcs	310_
Automobile Liability Insurance	5015120	Legal Advice	320_
Automobile Liability Insurance	5015120	Operatn Secure Correctionl Fac	398_
Automobile Liability Insurance	5015120	Med Examiner&Anatomical Svcs	403_
Automobile Liability Insurance	5015120	Communicable Dis Prevent&Cntrl	405_
Automobile Liability Insurance	5015120	Health Research/Planning&Coord	406_
Automobile Liability Insurance	5015120	State Health Services	4300_

Return - Print - Export

General Ledger: Expenditures by Account > BI-R.GL.0008 - Expenditures by Account and Program

Fiscal Year is equal to 2017  
and Ledger Short Name is equal to / is in ACTUALS  
and Fiscal Calendar Name is equal to / is in State Fiscal Calendar  
and Account Level 28 Code is equal to / is in EXP\_PROGRAM  
and Account Level 27 Code is equal to / is in 5015000\_  
and Account Level 29 Code is equal to / is in EXPENDITURES  
and Program Level 31 Code is equal to / is in ALL\_PROGRAMS  
and Actual Expenditures is not null

Return - Print - Export

General Ledger: Expenditures by Account > BI-R.GL.0008 - Expenditures by Account and Program



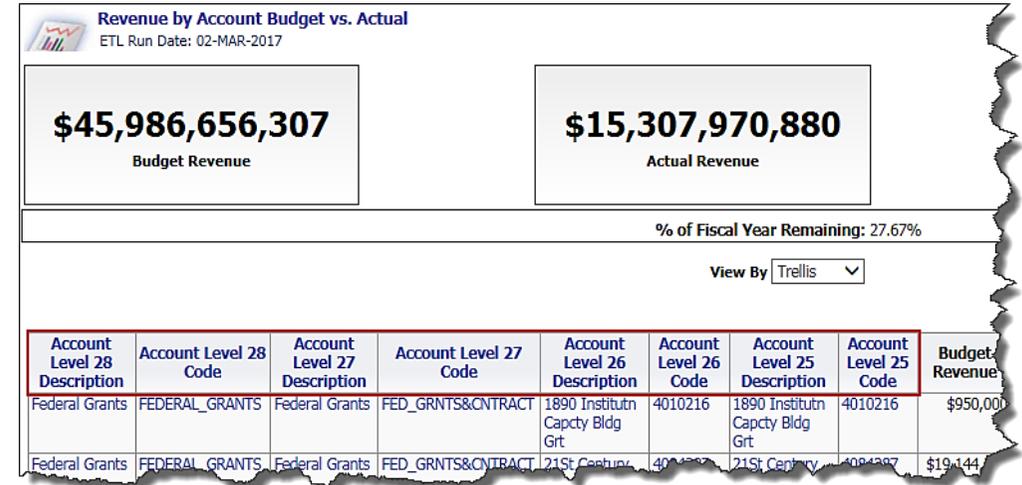
# Return and Back Buttons

Use the **Return** button on a report page to display the original Report or drill level that was in place before you started drilling.

In the example, click on the **Return** button while on **Account Level 25** to be taken back to **Account Level 28**.

While drilling down on a Report, click the **Back** button at the bottom of a Report to be taken back one level.

In the example, after drilling down to **Account Level 25**, click the **Back** button to be taken back to **Account Level 26**. Click the **Back** button again to be taken back to **Account Level 27**.



Fiscal Year is equal to **2017**

and Ledger Short Name is equal to / is in **ACTUALS**

and Fiscal Calendar Name is equal to / is in **State Fiscal Calendar**

and Account Level 29 Code is equal to / is in **REVENUES**

and Account Level 28 Code is not equal to / is not in **MISC\_REVENUE**

and FILTER(Budget Revenue USING Budget Ledger Short Name = 'C\_OFCREV\_B') is not null  
or Actual Revenue is not null

[Return](#) [Back](#) - [Print](#) - [Export](#)

Click on image to enlarge



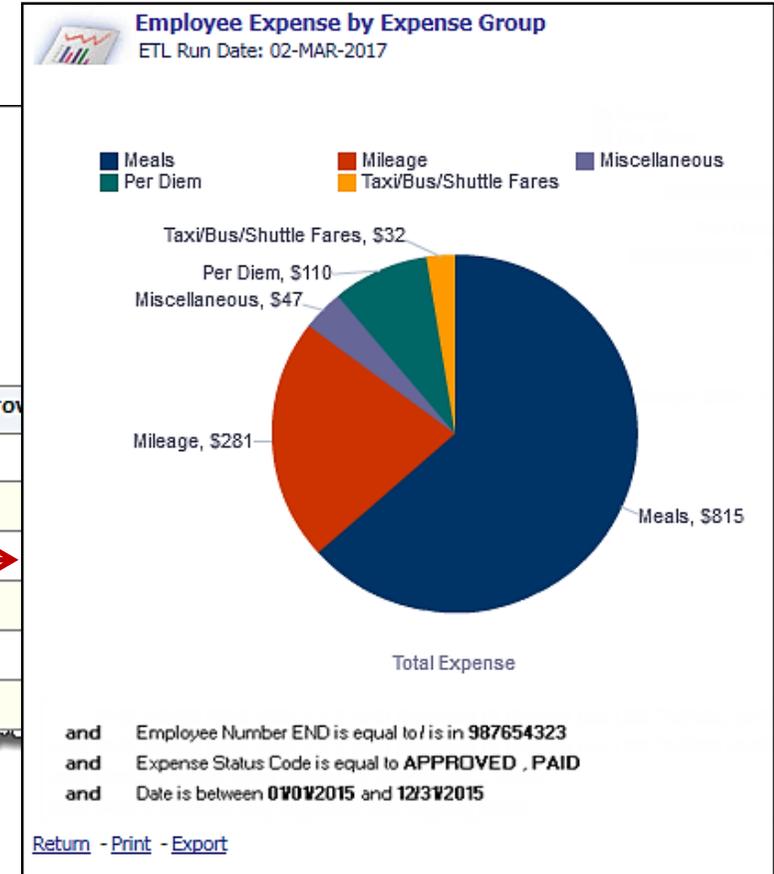
# Navigating Using the Light Bulb

Users can click on the light bulb and navigate to another Report. In this example, when you click on the light bulb for **William McKinley**, then you navigate to the **Employee Expense by Expense Group** specifically for **William McKinley**.

**Expenses by Employee**  
ETL Run Date: 23-DEC-2016

Click on to see additional detail on employee's expenses.

Employee Name		Employee Number	# of Approv
Benjamin harrison		987654321	
Grover Cleveland		987654322	
William McKinley		987654323	
Theodore Rossevelt		987654324	
William Howard Taft		987654325	
Woodrod Wilson		987654326	



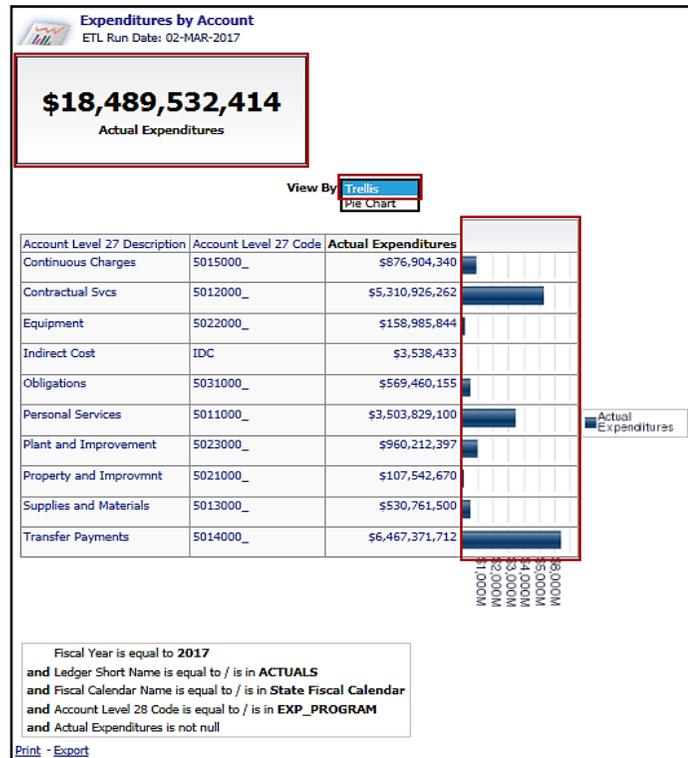


# Reports: Tables and Visualizations

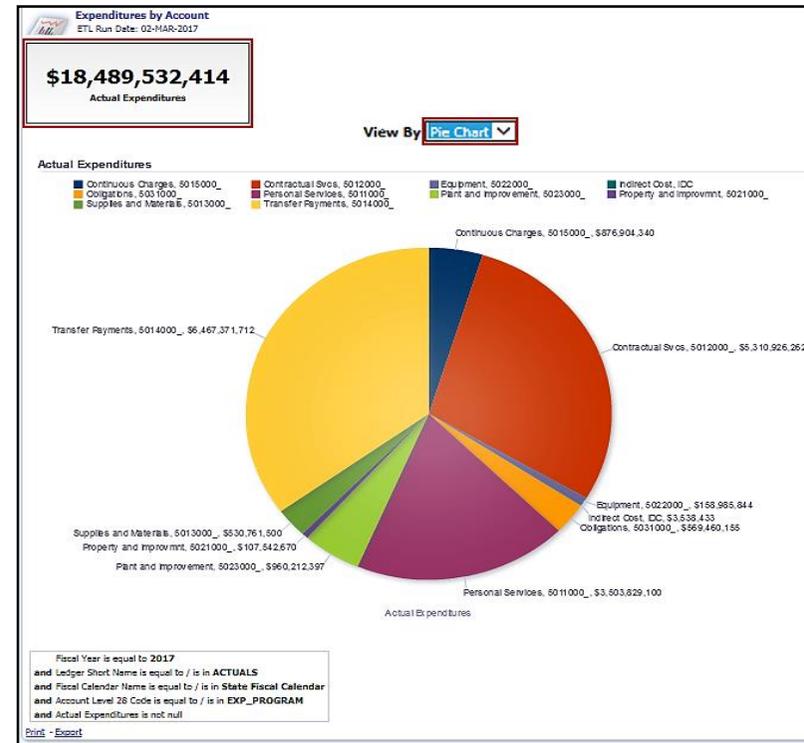
Cardinal BI Reports can be displayed as tables, visualizations, or a combination of the two. **Visualizations** are graphs or charts on a Report.

In the next few slides you will see different types of visualizations and tables.

### Trellis



### Pie Chart





# Report Tables

Types of tables:

- **Table**

Displays results in a visual representation of data organized by rows and columns.

- **Pivot table**

Displays data similarly to a standard table, but can display multiple levels of both row and column headings. In the example below, **Fiscal Years** become columns.

**Table**

Fiscal Year	Secretariat Level Name	Actual Expenditures
2014	ADMINISTRATION	\$1,507,102,537
2014	AGRICULTURE_FORESTRY	\$29,608,339
2014	COMMERCE AND TRADE	\$100,834,802
2014	EDUCATION	\$177,196,296
2014	EXECUTIVE OFFICES	\$12,281,138
2014	FINANCE	\$52,614,014
2014	HEALTH AND HUMAN RES	\$28,312,033
2014	NATURAL RESOURCES	\$29,622,643
2014	PUBLIC SAFETY	\$1,379,419,168
2014	TECHNOLOGY	\$370,570,095
2014	TRANSPORTATION	\$5,073,573,150
2014	VET AFFAIR_HMLND SEC	\$14,165,841
2015	ADMINISTRATION	\$609,186,190
2015	AGRICULTURE_FORESTRY	\$10,279,733
2015	COMMERCE AND TRADE	\$52,473,233
2015	EDUCATION	\$76,813,781
2015	EXECUTIVE OFFICES	\$4,319,507
2015	FINANCE	\$14,062,907
2015	HEALTH AND HUMAN RES	\$11,410,495
2015	NATURAL RESOURCES	\$13,145,239
2015	PUBLIC SAFETY	\$552,607,283
2015	TECHNOLOGY	\$131,417,632
2015	TRANSPORTATION	\$1,780,849,714
2015	VET AFFAIR_HMLND SEC	\$497,527

**Pivot Table**

Secretariat Level Name	Actual Expenditures	
	2014	2015
ADMINISTRATION	\$1,507,102,537	\$609,186,190
AGRICULTURE_FORESTRY	\$29,608,339	\$10,279,733
COMMERCE AND TRADE	\$100,834,802	\$52,473,233
EDUCATION	\$177,196,296	\$76,813,781
EXECUTIVE OFFICES	\$12,281,138	\$4,319,507
FINANCE	\$52,614,014	\$14,062,907
HEALTH AND HUMAN RES	\$28,312,033	\$11,410,495
NATURAL RESOURCES	\$29,622,643	\$13,145,239
PUBLIC SAFETY	\$1,379,419,168	\$552,607,283
TECHNOLOGY	\$370,570,095	\$131,417,632
TRANSPORTATION	\$5,073,573,150	\$1,780,849,714
VET AFFAIR_HMLND SEC	\$14,165,841	\$497,527



# Table Paging Controls

Cardinal BI defaults to show 30 rows of data on each table or pivot table. You can page through the table by using the arrow icons at the bottom of each report:



Returns to the beginning of the table output



Takes you up a page



Takes you down a page



Displays maximum (500) rows per page

Equipment	5022000_	Specific Use Equip	SPECIFIC_USE_EQUIP	\$12,617,169					
Equipment	5022000_	Stationary Equip	STATIONARY_EQUIP	\$6,257,737					
Indirect Cost	IDC	Indirect Cost	INDIRECT_COST	\$3,538,433					

\$4,000M  
\$3,000M  
\$2,000M  
\$1,000M  
\$0M

 Rows 16 - 30



# Table Functionality

Tables and pivot tables can be easily rearranged. Hovering over a column header causes a gray tab to appear. Click on the gray tab and drag that column to any position on the report.

Fiscal Year	Account Description	Account Code	Budget Amount
2014	Chauffeurs & Mtr Veh Op Permit	4002123	\$0
	Clean Fuels License	4002206	\$0
	Clerical Services	5012630	\$615,520
	Cmptr Processor Install Prchse	5015620	\$86,191
	Coal	5013210	\$502

Fiscal Year	Account Description	Budget Amount	Account Code
2014	Chauffeurs & Mtr Veh Op Permit	\$0	4002123
	Clean Fuels License	\$0	4002206
	Clerical Services	\$615,520	5012630
	Cmptr Processor Install Prchse	\$86,191	5015620
	Coal	\$502	5013210





# Report Visualizations

Visualizations available in Cardinal BI include:

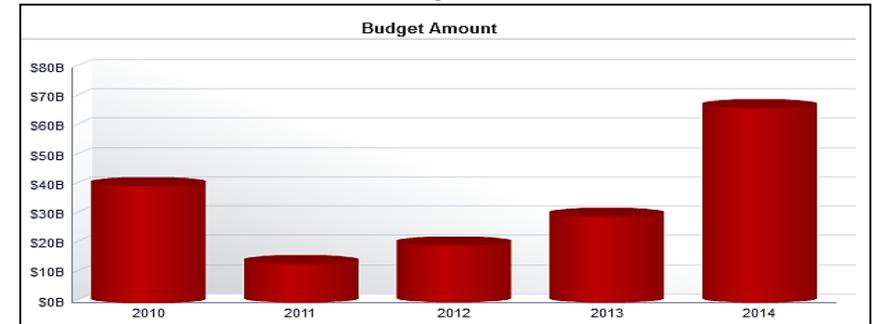
## Graph

Displays numeric information visually, which makes it easier to understand large quantities of data. Graphs are used most often and usually reveal trends or show quantities associated with categories (e.g., Budget Amount by Year, Actual Expenses by Department).

## \*Gauge

Plots one data point, indicating whether that point falls in an acceptable or unacceptable range. (There are different kinds of gauges (e.g., Dial, Horizontal bar, Vertical bar, Bulb).) Gauges identify problems in data, making them very useful for showing performance against goals (e.g., Budget Expense Remaining for a Department).

## Graph



## \*Gauge



\* Not currently used in BI



# Report Visualizations (continued)

## Performance Tile

Displays a single aggregate measure value in a manner that is both visually simple and prominent, yet it immediately reveals summary metrics that will likely be presented in more detail within a Dashboard view.

## Performance Tile



## Trellis

Displays multidimensional data shown as a set of cells in a grid, where each cell represents a subset of data using a particular graph type. Data can be represented with graphs, microcharts, and numbers.

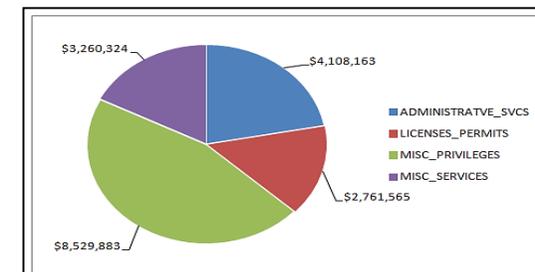
## Trellis



## Pie Chart

Shows data sets as dollar amounts or percentages of a whole. Pie charts are useful for comparing parts of a whole, such as expenditures by fund, program, or account.

## Pie Chart





# Exporting and Printing

At the bottom of each Report, you can print and export data from that specific Report.

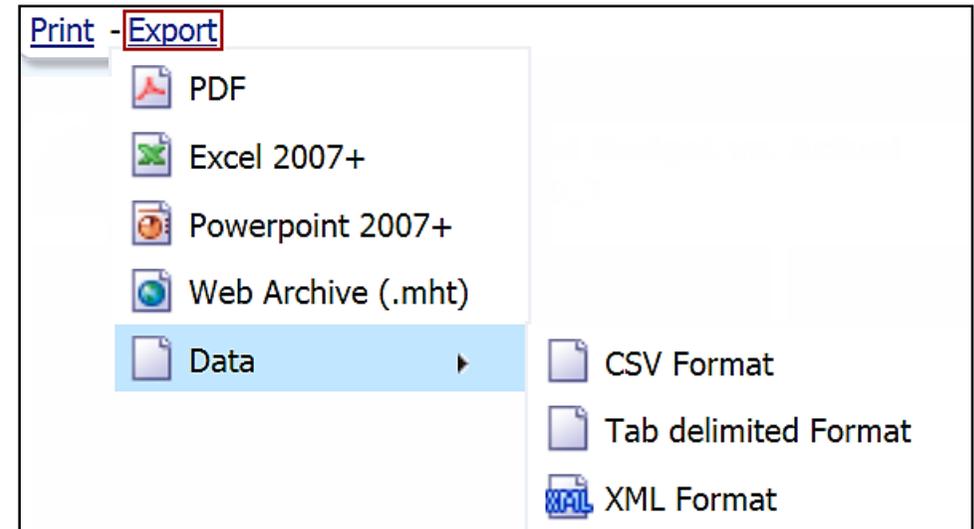
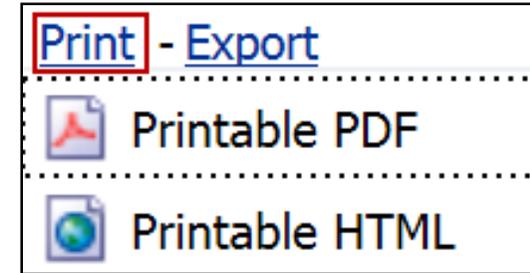
## Print

- Printable PDF
- Printable HTML

## Export

- PDF
- Excel
- PowerPoint
- Web Archive
- Data (CSV, Tab Delimited, or XML)

**Note:** Exporting data to a CSV file opens the file in Excel, which can then saved as an Excel file.

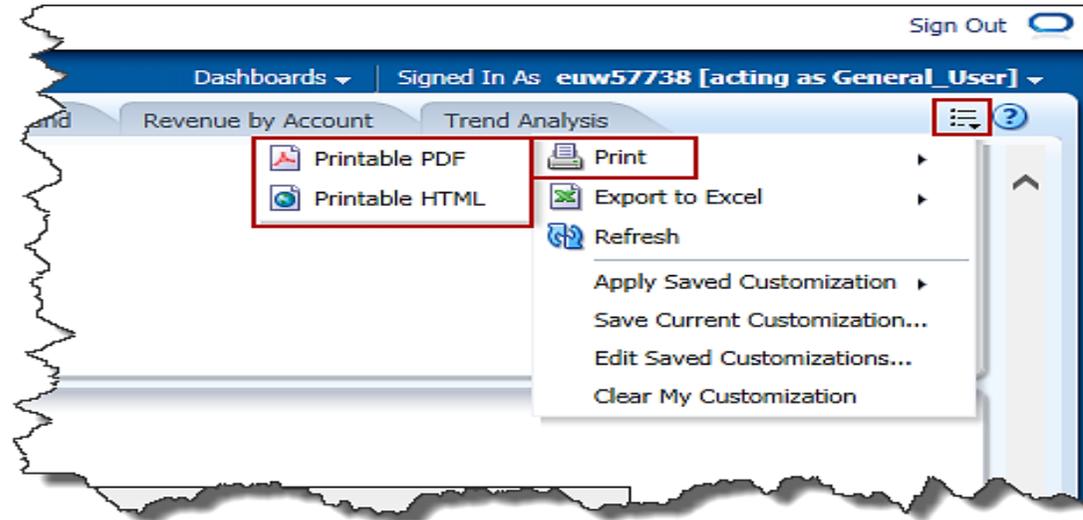




# Exporting and Printing (continued)

You can print all the Reports on a Dashboard page level at once.

- Click on the **Page Options** button in the upper right corner of the Dashboard. Select **Print** and then select either **Printable PDF** or **Printable HTML**. The Dashboard is now ready to print.
- This is beneficial to see all Reports on the Dashboard page with the same prompt values associated to each.

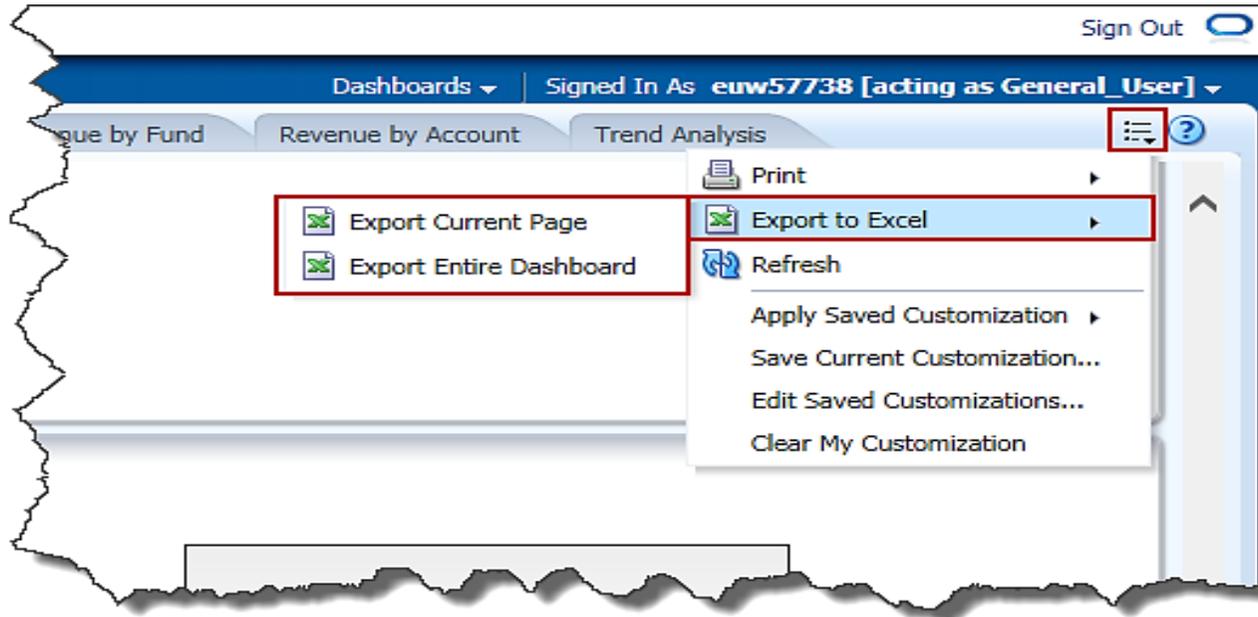




# Exporting and Printing (continued)

You can also export a current Dashboard page or all Dashboard pages to Excel.

- To export a current Dashboard page or all Dashboard pages to Excel, click on the **Page Options** button in the upper right corner of the Dashboard. Select **Export to Excel** and then select either **Export Current Page** or **Export Entire Dashboard**. The exported Dashboard page(s) will open in an Excel file.





## Lesson 2: Checkpoint

Now is your opportunity to check your understanding of the course material.

Read the question on the next slide(s), select answer(s) and click **Submit** to see if you chose the correct response.



The Dashboards link on the Global Header allows you to move to different Subject Areas that contain all Dashboard Pages and Reports.

- True
- False

If you change a prompt value, the reports on the Dashboard will automatically update.

- True
- False

A report can:

- Have hyperlinked values that lead to another report with the information associated
- Have a dropdown selection for different possible columns
- Have the option to drilldown on hierarchies to see information in a more detailed manner
- All of the above



## Lesson 2: Summary

2

### Dashboards and Reports

In this lesson, you learned:

- To navigate through Cardinal BI, use the Dashboards link on the Global Header. Use the tabs within each Dashboard to navigate from one Dashboard page to another.
- Prompts are used on each Dashboard page to filter the data into smaller increments.
- Report tables and pivot tables have many features that allow sorting, rearranging columns, and modifying the way the table displays the data.
- There are many different types of report graphics that are used to display data.
- There are different ways to print and export individual reports within Cardinal BI. It is possible to print a whole Dashboard page with multiple Reports.



# Lesson 3: Introduction

3

Personalization and Finding Help

This lesson covers the following topics:

- Saved Customization
- Setting Landing Page
- Basic Troubleshooting
- Understanding Report Results
- Cardinal Website



# Saved Customization

Customize a Dashboard page to have certain prompt values automatically populated with a saved customization. In this example, the Saved Customization sets the Fiscal Year prompt to include 2016 and 2017 for Agency 50100 on the **Trend Analysis** Dashboard.

The screenshot shows the 'Business Intelligence' interface with the 'Trend Analysis' dashboard selected. A red box highlights the configuration area for the report, which includes the following fields:

* Fiscal Year	Secretariat Level Name	Agency Description
2017:2016	(All Column Value)	50100

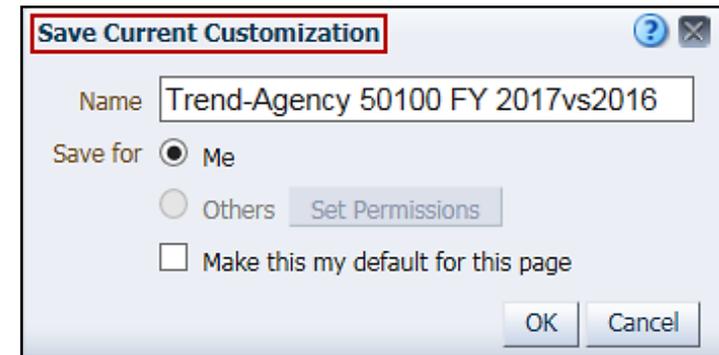
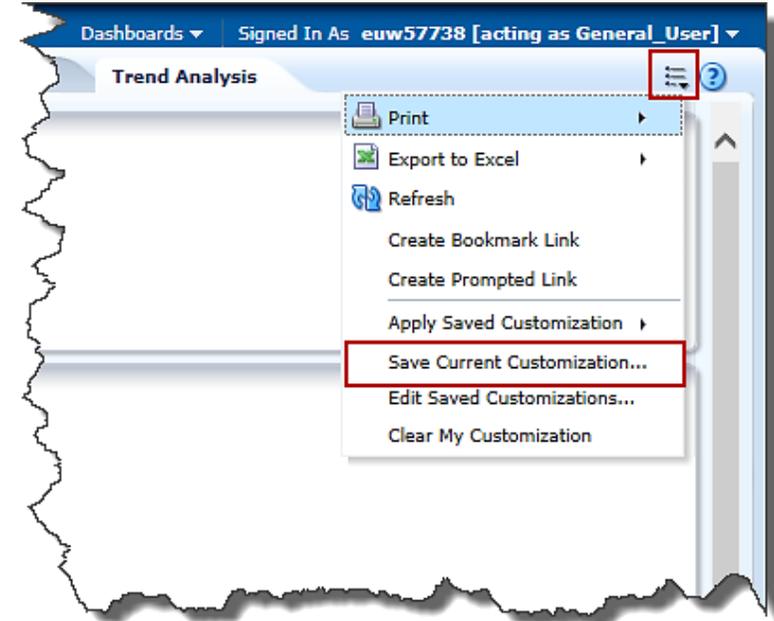
Additional options include a checked checkbox for 'Select by Agency Code' and buttons for 'Apply' and 'Reset'. A note below the form states: 'NOTE: For performance purposes, please select only 2 fiscal years at one time to run the report.' The dashboard title is 'Revenue and Expenditures FY Trend Analysis' with an ETL Run Date of 23-MAR-2017.



# Saved Customization (continued)

To personalize a Dashboard page:

- Navigate to the Dashboard page to personalize and input desired prompts.
- Click the **Page Options** button in the upper right corner of the Dashboard.
- Click the **Save Current Customization** list item to save the prompt values within a certain Dashboard.
- Name the page.
- Check the **Make this my default for this page** checkbox option to have the customizations automatically in place when navigating to the personalized Dashboard.





# Saved Customization (continued)

Users can create multiple Saved Customizations with different prompt values. For example, with multiple agencies, it is possible to save multiple Dashboard pages, each with a different agency prompted.

To apply another saved Dashboard, select another agency and click on the **Apply Saved Customization** button.

The **Apply Saved Customization** functionality uses a previously saved customization on the current Dashboard page. In the example below, there are two different Saved Dashboards to choose from.

The screenshot shows a web dashboard interface. At the top right, there is a 'Sign Out' button. Below it, a navigation bar shows 'Dashboards' and 'Signed In As euw57738 [acting as General User]'. The main content area has tabs for 'Project', 'Revenue by Fund', 'Revenue by Account', and 'Trend Analysis'. A context menu is open over the 'Trend Analysis' tab, listing options: Print, Export to Excel, Refresh, Create Bookmark Link, Create Prompted Link, **Apply Saved Customization** (highlighted), Save Current Customization..., Edit Saved Customizations..., and Clear My Customization. Below the menu, a table displays data:

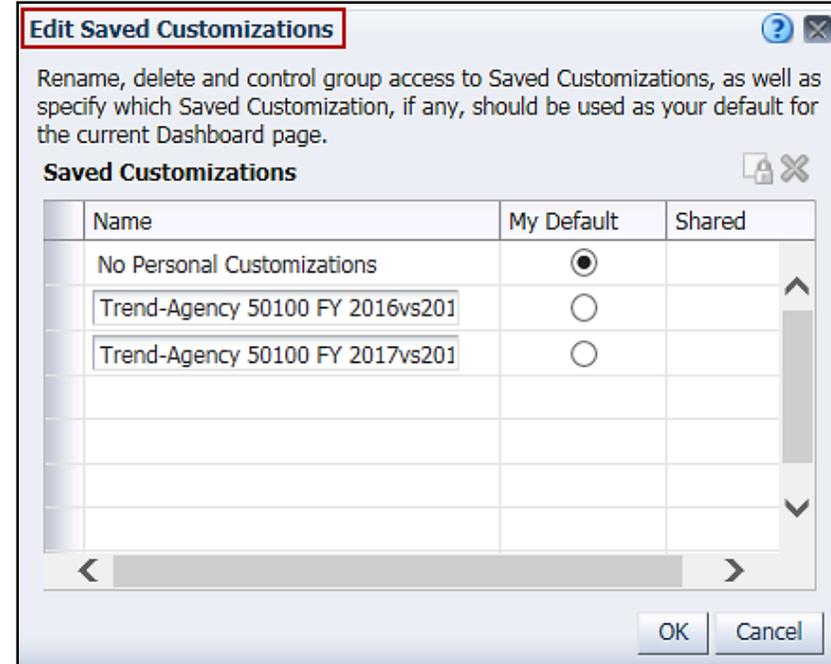
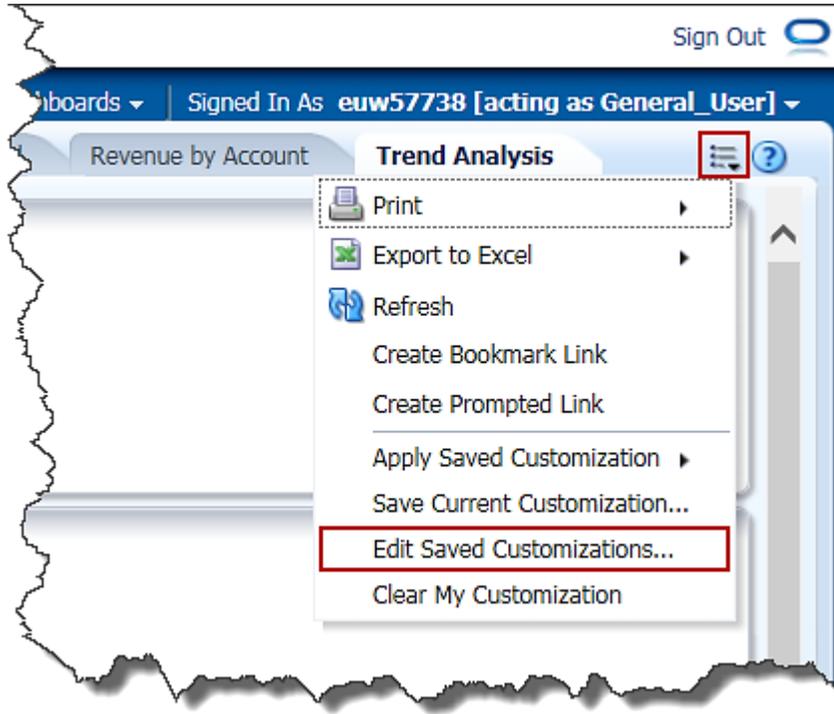
Features	Difference
52,513	\$655,718,991
8,790	\$676,134,515



# Saved Customization (continued)

Modify saved Dashboards by using the **Edit Saved Customization** menu item.

**Edit Saved Customizations** allows renaming and editing Saved Customizations. It also allows a Page Default selection.

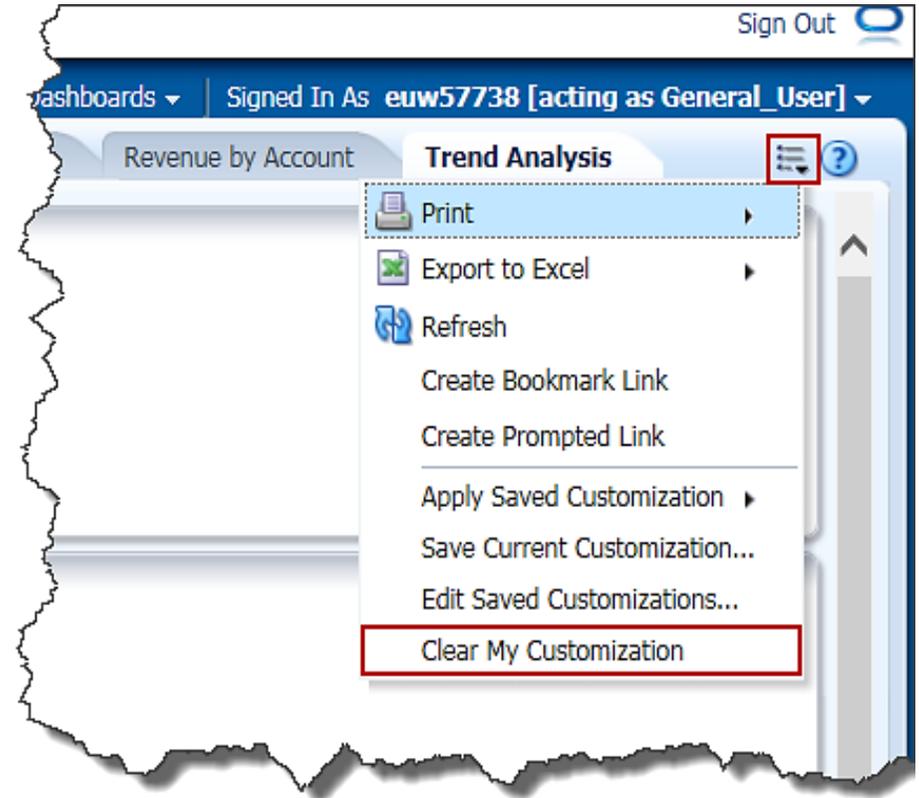




# Saved Customization (continued)

To clear customizations and view the Cardinal BI default Dashboard page, use the **Clear My Customization** menu item.

To clear customization and view the Cardinal BI default Dashboard page, use the **Clear My Customization** menu item to reset the current Dashboard back to its default state.

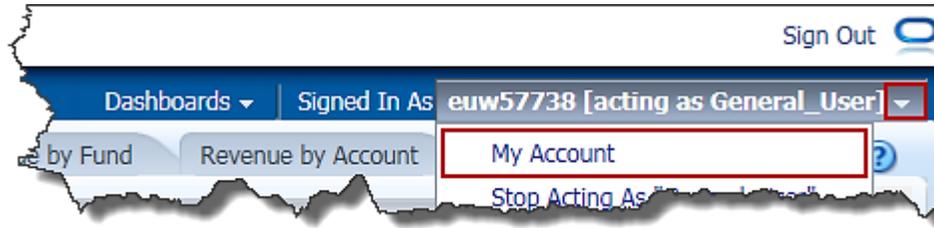




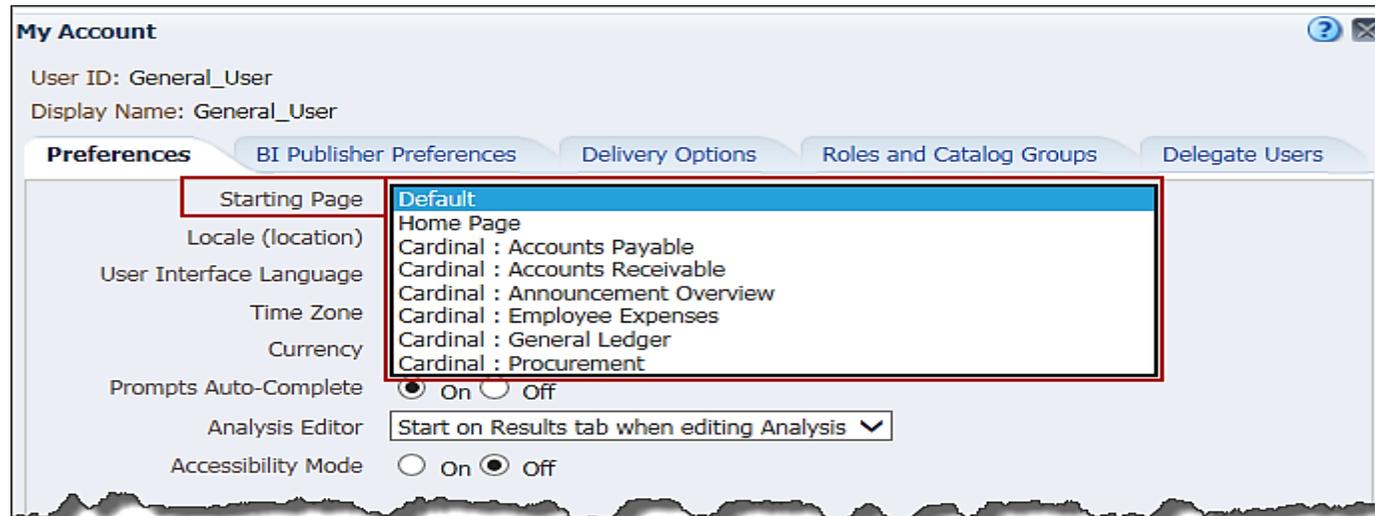
# Setting Landing Page

It is possible to change the default landing page within Cardinal BI in order to see your most important Dashboard page upon logging in.

- Click on the arrow next to the User Name to the right of **Signed In As** in the upper right corner, then click on the **My Account** link.



- Select the preferred Dashboard Page from the drop-down list entitled **Starting Page** and click **OK**.





# Basic Troubleshooting

When working with Cardinal BI, keep in mind these helpful hints:

The Cardinal BI Solution technology (OBIEE) is best optimized when used with:

- Internet Explorer 7.x, 8.x, 9.x, 10.x
- Firefox 3.5+, 6+, 13+
- Chrome 19+
- Safari 4.x, 5.x

Issues can often be fixed by simply clicking the **Refresh** button on your browser.

Issues can often be fixed by clearing the cache on your browser

- To do this within an IE screen navigate to:

**Tools > Internet Options > Browsing History > Delete > select Temporary Internet Files and Cookies > Delete**



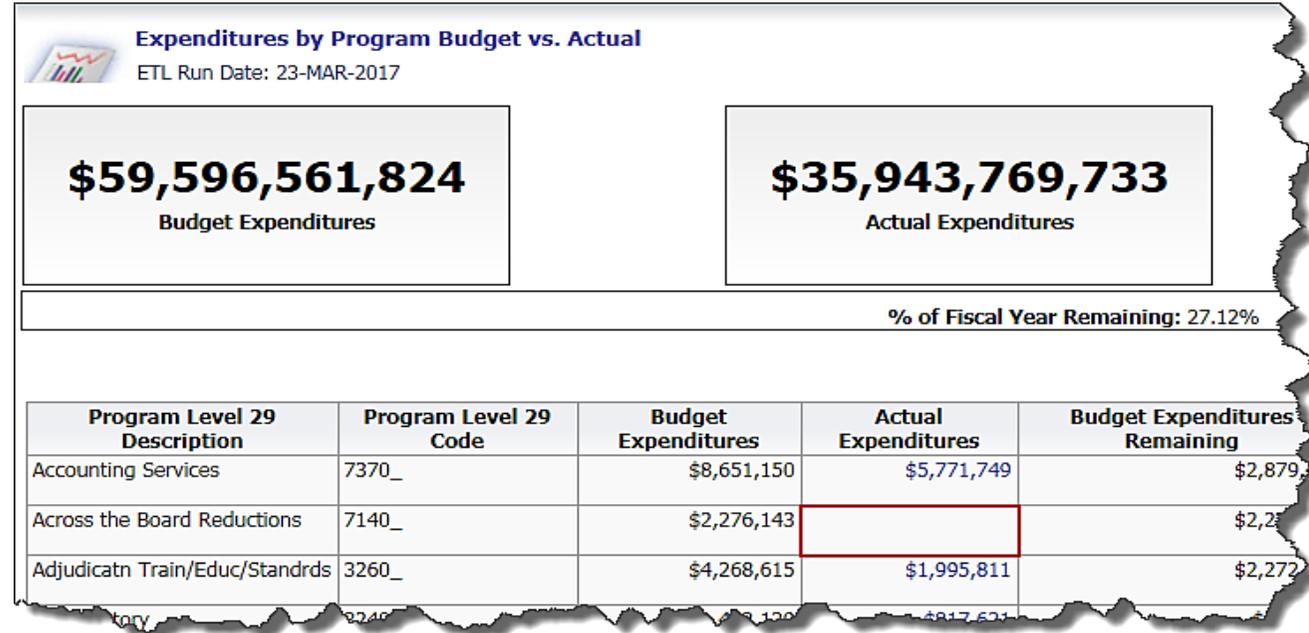
# Understanding Report Results

If a Report returns **No Results**, this means there is no data that matches the prompt criteria. Try expanding the prompt values to include a bigger dataset in order to see results within the Report.

There are a few report values that may seem abnormal, but are expected. These do not signify that the information is incorrect, rather they are a result of the relationships within the data.

The values are:

- **Blank spaces:** In this example, a ChartField cell contains a blank space. This signifies that no monetary transactions exist for that particular field. However, notice that other fields are populated with monetary amounts.





# Understanding Report Results (continued)

- **Not Applicable:** In this example, several ChartField cells contain the words `_NOT_APPLICABLE_`. This signifies that no data exists for that particular ChartField.

Fund Code	Program Code	Account Code	Department Code	Cost Center Code	Task Code	PC Business Unit Code	Project Code	
06090	_NOT_APPLICABLE_	101010	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	711008	5012780	95700	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
01000	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06080	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	_NOT_APPLICABLE_	205025	99999	_NOT_APPLICABLE_	_NOT_APPLICABLE_	15100	0000103772	NO
06080	826001	5012140	97500	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
01000	799001	5012140	92100	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO
06090	711008	5012140	95700	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	_NOT_APPLICABLE_	NO



# Access BI Support Materials

For additional information, the  link in the upper right corner opens the Cardinal website, providing access a number of online tools such as **Job Aids** and **Course Materials** to help you complete a task.



You can also access **Job Aids** and **Course Materials** directly from the Cardinal website under the **Training** section. Additional guidance for accessing these materials is provided on the following slides.



# Access BI Job Aids

To access **Job Aids** from the Cardinal website visit: [www.cardinalproject.virginia.gov](http://www.cardinalproject.virginia.gov)

From the home page, navigate to **Training**

- Select **Job Aids**
- Select Agency: **Statewide**
- Select Application: **SW\_Business Intelligence**
- Select Module: **SW\_Business Intelligence Reporting**
- Select **Job Aid**
- Click **Submit**

Home Applications Resources Training Project About

### Cardinal Job Aids

A Cardinal Job Aid is a printable reference document with step-by-step instructions on how to perform a task in the Cardinal system.

Please use the menu below to select a job aid:

**Agency:**  
Statewide

**Application:**  
SW\_Business Intelligence

**Module:**  
SW\_Business Intelligence Reporting

**Job Aid:**  
-- Select Job Aid --  
-- Select Job Aid --  
BI101: Accounts Payable Dashboard  
BI101: Accounts Receivable Dashboard  
BI101: Drilldown - Levels for Statewide, Program, Fund, and Account  
BI101: Employee Expenses Dashboard  
BI101: General Ledger Dashboard  
BI101: Inquiry Dashboard



# Access BI Course Materials

To access **Course Materials** from the Cardinal website visit: [www.cardinalproject.virginia.gov](http://www.cardinalproject.virginia.gov)

From the home page, navigate to **Training**

- Select **Course Materials**
- Select Agency: **Statewide**
- Select Application: **SW\_Business Intelligence**
- Select Module: **SW\_Business Intelligence Reporting**
- Select Course: **BI101: Cardinal Business Intelligence Overview**
- Click **Submit**

**Cardinal Course Materials** ✕

Cardinal users are encouraged to participate in the Cardinal training courses related to their role(s) in the system. To register, please visit the COVLC. For VDOT employees, classes are available through the VDOT University.

Users can also access course materials below. Training materials are provided for each course. **Note:** These materials are for reference purposes only. Some web-based training features have been disabled for download. Training credit is only available for training completed in the COVLC and VDOT University systems.

Please use the menu below to select course materials:

**Agency:**  
Statewide

**Application:**  
SW\_Business Intelligence

**Module:**  
SW\_Business Intelligence Reporting

**Course:**  
BI101: Cardinal Business Intelligence Overview

Submit Cancel



## Lesson 3: Checkpoint

Now is your opportunity to check your understanding of the course material.

Read the question on the next slide(s), select answer(s) and click **Submit** to see if you chose the correct response.



Using Customization settings allows you to create multiple customized dashboards with saved prompt values so that you do not have to search for the same prompts every time you navigate to that Dashboard.

- True
- False

If a report displays "No results" after you input your prompt values, the best option is to:

- Change the prompt values to include a smaller range of data
- Change the prompt values to include a larger range of data
- Clear all prompt values
- Navigate to a different report

If you need extra help with the Cardinal Business Intelligence Solution, you can find job aids and other training materials within the Cardinal website.

- True
- False



# Lesson 3: Summary

3

## Cardinal Business Intelligence Basics

In this lesson, you learned:

- Users can personalize individual Dashboard pages.
- Users can make any available dashboard page a personalized landing page.
- Personalization on a dashboard can be cleared by using the **Page Options** button.
- When working within the Cardinal BI Solution, it is helpful to use certain browsers, clear the cache, and refresh the page if having issues.
- Report results sometimes are Not Applicable, blank, or show no results.
- For additional information about Cardinal Business Intelligence, see the **Job Aids** located on the Cardinal website in **Job Aids** under **Training**.



# Course Summary

BI101

Cardinal Business Intelligence Overview

In this course, you learned:

- The purpose of Cardinal Business Intelligence.
- How to log into Cardinal Business Intelligence.
- The use of the Global Header.
- The functionality of a Dashboard and a Report.
- How to use prompts and prompt capabilities to Filter report data.
- How to use hierarchy drilldowns and navigation between Dashboard pages.
- The available report features.
- The different Report and graph types.



# Course Summary (continued)

SW BI101

Cardinal Business Intelligence Overview

- How to manipulate report columns on a Dashboard.
- How to print and export data.
- How to set default prompts on a Dashboard page.
- How to set a landing page.
- How to clear personalizations.
- How to find Cardinal Business Intelligence help.



# Appendix

- Key Terms
- Drilldown Interaction
- Screenshot Enlargements



# Key Terms

**Cardinal Business Intelligence (BI):** A tool created using Oracle Business Intelligence Enterprise Edition (OBIEE). It focuses on easy access to information to improve information sharing across a wide range of audiences through self-service reporting and analysis. It is made up of Dashboards and Reports with analytical content.

**Column Selector:** A set of drop-down lists that contain pre-selected columns. Dynamically select columns and change the data that is displayed in the views of the analysis.

**Dashboard:** A structure that organizes analytical content (e.g., reports, links, visualizations). The content on a Dashboard is usually displayed as a report targeted to users.

**Global Header:** A list of links at the top of Cardinal BI that is always available as you work. It allows easy access to Cardinal BI functionality. For example, Home page, access dashboards, open objects (such as analyses and dashboard prompts), and so on, are displayed.

**Graph:** A type of visualization that displays numeric information visually, making it easier to understand large quantities of data. There are different kinds of graphs, such as: Bar (Vertical, Horizontal, Stacked), Line, Area, Pie, Line-Bar, Time Series Line, Scatter, Bubble, Radar.

**Guided Navigation:** A feature that allows navigating to another report with prompt values automatically enabled that correspond to the original report navigation hyperlink.

**Hierarchical column:** A column that can expand (or drill down) into more specific information for a certain number of pre-established levels.



## Key Terms (continued)

**Oracle Business Intelligence Enterprise Edition (OBIEE):** The technology behind the Cardinal BI Solution.

**Performance Tile:** A type of visualization that displays a single aggregate measure value in a manner that is both visually simple and prominent, yet it immediately reveals summary metrics to the user that will likely be presented in more detail within a dashboard view.



## Key Terms (continued)

**Pie Chart:** A type of visualization that shows data sets as dollar amounts or percentages of a whole. Pie charts are useful for comparing parts of a whole, such as expenditures by fund, program, or account.

**Pivot Table:** A visual representation of data similar to a standard table. It can display multiple levels of both row and column headings, allowing you to view data in many different ways.

**Prompt:** A tool that allows you to filter the dashboard to smaller increments of data. Once a prompt is applied, the report for that dashboard will reflect the newly queried selections.

**Report:** An analysis displayed as a table or graphic based on a data set.

**Subject Area:** A logical grouping of similar content and information.

**Table:** A visual representation of data organized by rows and columns.

**Trellis:** A type of visualization that displays multidimensional data shown as a set of cells in a grid, where each cell represents a subset of data using a particular graph type. Data can be represented with graphs, microcharts, and numbers.

**View Selector:** A drop-down list used to select a specific view of the results from among the saved views.

**Visualization:** A graph or chart on a report. They include graphs, pie charts, gauges, funnels, performance tiles, trellis, and map views.



# Drilldown Interaction

## Drilldown

### Introduction

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Contract Charge	803000	\$1,704,100,254
Contractual Sale	801000	\$10,482,078,039

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Contract Charge	803000	\$1,704,100,254
Contractual Sale	801000	\$10,482,078,039

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Contract Charge	803000	\$1,704,100,254
Contractual Sale	801000	\$10,482,078,039

In addition to drilling down on a hierarchical column (or hierarchy) based on the column heading, you can drill down on a specific code or description. This will show an example of using drilldown.

Please refer to the **Drilldown on Account Levels Job Aid** on the Cardinal website for additional information using the following navigation path:

**Cardinal Website > Statewide Toolbox > Job Aids > Business Intelligence Reporting**

Drilldown - Account Level 27

Drilldown - Account Level 26

Drilldown - Account Level 25



# Drilldown: Account Level 27

**Expenditures by Account**  
ETL Run Date: 28-MAR-2017

## \$36,488,228,541

Actual Expenditures

View By Trellis ▼

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$1,704,100,254
Contractual Svcs	5012000_	\$10,440,078,609

**Expenditures by Account**  
ETL Run Date: 28-MAR-2017

## \$1,704,100,254

Actual Expenditures

View By Trellis ▼

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Actual Expenditures
Continuous Charges	5015000_	Cap Lease Pay	CAP_LEASE_PAYMENTS	\$31,591,774
Continuous Charges	5015000_	Indirect Cost	CC_IDC_INT_AGY	(\$33,429,412)
Continuous Charges	5015000_	Install Purchase	INSTALLMENT_PURCHSE	\$8,671,211
Continuous Charges	5015000_	Insurance Fix Asset	INSURANCE_FIXED_ASSET	\$11,893,199
Continuous Charges	5015000_	Insurance Operatn	INSURANCE_OPERATN	\$50,985,926
Continuous Charges	5015000_	Misc	CC_MISC	\$657,051
Continuous Charges	5015000_	Operating Lease	OP_LEASE_PAYMENTS	\$278,224,306
Continuous Charges	5015000_	Pay St Emp Hlth Ins	PAY_ST_EMP_HLTH_INS	\$1,032,021,196
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	\$323,485,002

**Expenditures by Account**  
ETL Run Date: 28-MAR-2017

## \$323,485,002

Actual Expenditures

View By Trellis ▼

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Account Level 25 Description	Account Level 25 Code	Actual Expenditures
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Agency Service Charges	5015410	\$113,069,744
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	DGS Parking Charges	5015450	\$1,086,766
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Service Charges	5015420	\$143,026,896
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Buildings	50154201	\$5,220,822
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Roadways	50154202	\$5,788,291
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Private Vendor Service Charges	5015470	\$1,645,212
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Refuse Service Charges	5015430	\$11,174,407
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	SPCC And EDI Check Fees	5015460	\$157,716
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Sewer Service Charges	50154402	\$121,846
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewage-Non Routine	50154401	\$291,245
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewer Service Charges	5015440	\$41,021,060



# Drilldown Interaction

## Drilldown

**Drilldown - Account Level 27**

**\$36,488,228,541**  
Actual Expenditures

ETL Run Date: 28-MAR-2017

View By: Trellis

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$1,704,100,254
Contractual Svcs	5012000_	\$10,440,078,609

In this example, we start on **Account Level 27** and will drill down by selecting **Continuous Changes**.

Drilldown - Account Level 27

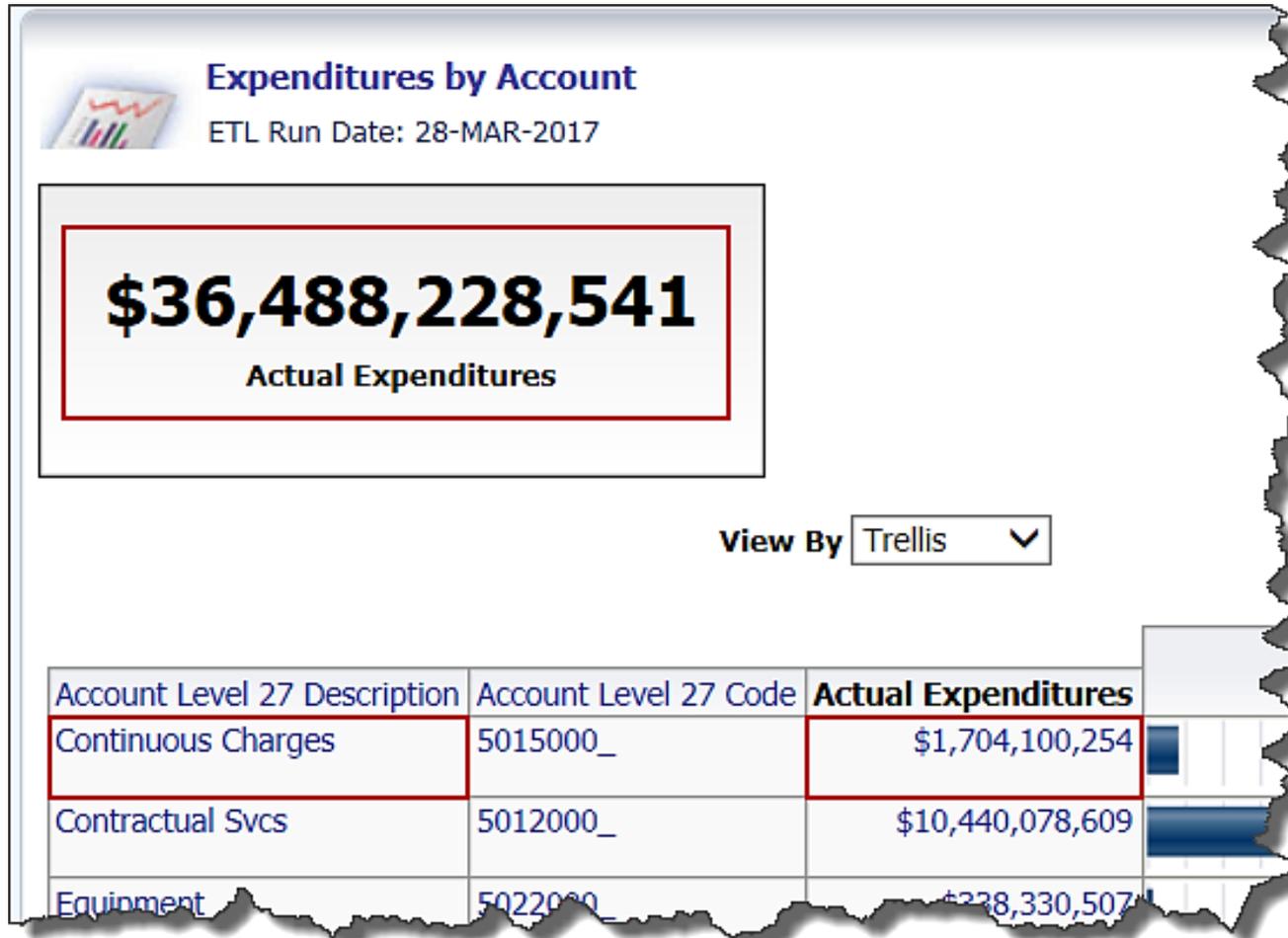
Drilldown - Account Level 26

Drilldown - Account Level 25

Image enlargement on next page



# Drilldown: Account Level 27





# Drilldown: Account Level 26

Drilldown

Drilldown - Account Level 27

Drilldown - Account Level 26

## Drilldown - Account Level 26

**\$1,704,100,254**  
Actual Expenditures

View By Trellis ▼

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Actual Expenditures
Continuous Charges	5015000_	Cap Lease Pay	CAP_LEASE_PAYMENTS	\$31,591,774
Continuous Charges	5015000_	Indirect Cost	CC_IDC_INT_AGY	(\$33,429,412)
Continuous Charges	5015000_	Install Purchase	INSTALLMENT_PURCHASE	\$8,671,211
Continuous Charges	5015000_	Insurance Fix Asset	INSURNCE_FIXED_ASSET	\$11,893,199
Continuous Charges	5015000_	Insurance Operatn	INSURANCE_OPERATN	\$50,985,926
Continuous Charges	5015000_	Misc	CC_MISC	\$657,051
Continuous Charges	5015000_	Operating Lease	OP_LEASE_PAYMENTS	\$278,224,306
Continuous Charges	5015000_	Pay St Emp Hlth Ins	PAY_ST_EMP_HLTH_INS	\$1,032,021,196
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	\$323,485,002

**Account Level 26** under **Continuous Changes**. To drill down further, **Service Charges** is selected.

Drilldown - Account Level 25

Image enlargement on next page



# Drilldown: Account Level 27-26



## Expenditures by Account

ETL Run Date: 28-MAR-2017

**\$1,704,100,254**

Actual Expenditures

View By  ▼

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Actual Expenditures
Continuous Charges	5015000_	Cap Lease Pay	CAP_LEASE_PAYMENTS	\$31,591,774
Continuous Charges	5015000_	Indirect Cost	CC_IDC_INT_AGY	(\$33,429,412)
Continuous Charges	5015000_	Install Purchase	INSTALLMENT_PURCHSE	\$8,671,211
Continuous Charges	5015000_	Insurance Fix Asset	INSURNCE_FIXED_ASSET	\$11,893,199
Continuous Charges	5015000_	Insurance Operatn	INSURANCE_OPERATN	\$50,985,926
Continuous Charges	5015000_	Misc	CC_MISC	\$657,051
Continuous Charges	5015000_	Operating Lease	OP_LEASE_PAYMENTS	\$278,224,306
Continuous Charges	5015000_	Pay St Emp Hlth Ins	PAY_ST_EMP_HLTH_INS	\$1,032,021,196
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	\$323,485,002



# Drilldown Interaction

Drilldown

Drilldown - Account Level 27

Drilldown - Account Level 26

Drilldown - Account Level 25

## Drilldown - Account Level 25

**\$323,485,002**  
Actual Expenditures

View By: Trellis

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Account Level 25 Description	Account Level 25 Code	Actual Expenditures
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Agency Service Charges	5015410	\$113,950,741
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	DGS Parking Charges	5015450	\$1,086,760
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Service Charges	5015420	\$143,026,890
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Buildings	50154201	\$5,220,822
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Roadways	50154202	\$5,788,291
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Private Vendor Service Charges	5015470	\$1,645,212
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Refuse Service Charges	5015430	\$11,174,407
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	SPCC And EDI Check Fees	5015460	\$157,716
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Sewer Service Charges	50154402	\$121,846
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewage-Non Routine	50154401	\$291,245
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewer Service Charges	5015440	\$41,021,000

Account Level 25 displays with all account classifications under **Service Charges**.

Image enlargement on next page



# Drilldown: Account Level 26-25



## Expenditures by Account

ETL Run Date: 28-MAR-2017

# \$323,485,002

Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Account Level 25 Description	Account Level 25 Code	Actual Expenditures
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Agency Service Charges	5015410	\$113,950,741
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	DGS Parking Charges	5015450	\$1,086,766
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Service Charges	5015420	\$143,026,896
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Buildings	50154201	\$5,220,822
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Electrical Svc Chrg-Roadways	50154202	\$5,788,291
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Private Vendor Service Charges	5015470	\$1,645,212
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Refuse Service Charges	5015430	\$11,174,407
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	SPCC And EDI Check Fees	5015460	\$157,716
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Sewer Service Charges	50154402	\$121,846
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewage-Non Routine	50154401	\$291,245
Continuous Charges	5015000_	Service Charges	SERVICE_CHARGES	Water & Sewer Service Charges	5015440	\$41,021,060

\$600K  
\$300K  
\$0



# Dashboard and Report Overview

**CARDINAL Business Intelligence** Search

**General Ledger** Home Catalog

**Expenditures and Revenue Summary** Expenditures by Program and Fund Expenditures by Account Expenditures by Project Revenue by Project

\* Fiscal Year  
2017 Apply Reset

**Expenditures Budget vs. Actual**  
ETL Run Date: 15-MAR-2017

**\$59,478,268,736**  
Budget Expenditures

**\$28,474,507,733**  
Actual Expenditures

% of Fiscal Year Remaining: 29.32%

Statewide Level Name	Budget Expenditures	Actual Expenditures	Budget Expenditures Remaining	% of Budget Expenditures Remaining
STATEWIDE	\$59,478,268,736	\$28,474,507,733	\$31,003,761,003	52.13%

Fiscal Year is equal to 2017  
and Ledger Short Name is equal to / is in ACTUALS  
and Fiscal Calendar Name is equal to / is in State Fiscal Calendar  
and Actual Expenditures is not null  
or FILTER(Budget Expenditures USING Budget Ledger Short Name = 'C\_APPROP\_B') is not null

[Print](#) - [Export](#)

**Revenue Budget vs. Actual**  
ETL Run Date: 15-MAR-2017

**\$46,206,056,307**  
Budget Revenue

**\$24,640,273,293**  
Actual Revenue

% of Fiscal Year Remaining: 29.32%

Click on image to return



# Guided Navigation

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

View By

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,926,262
Equipment	5022000_	\$158,985,844
Indirect Cost	IDC	\$3,538,433

View By

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,926,262
Equipment	5022000_	\$158,985,844
Indirect Cost	IDC	\$3,538,433

Expenditures by Account and Program

Click on image to return



# Guided Navigation (continued)

**Expenditures by Account**  
ETL Run Date: 02-MAR-2017

**\$18,489,532,414**  
Actual Expenditures

**Expenditures by Account and Program**  
ETL Run Date: 02-MAR-2017

Account Description	Account Code	Program Level 29 Description	Program Level 29 Code	Actual Expenditures
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Academic Support	1040_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Higher Ed Institutional Support	1060_	\$662
Chrg Crd Purch Continuous Chrg	5015090	Operatn Secure Correctionl Fac	3980_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Administrative & Support Svcs	5990_	\$0
Chrg Crd Purch Continuous Chrg	5015090	Defense Preparedness	7210_	\$11
Aircraft Insurance	5015110	Fin Asst-Education&Genrl Svcs	1100_	\$1,628
Aircraft Insurance	5015110	Law Enforcemnt&Hwy Safety Svcs	3100_	\$288,563
Aircraft Insurance	5015110	Hwy Svcs Mainten & Operatns	6040_	\$0

View By Trellis

Account Level 27 Description	Account Level 27 Code	Actual Expenditures
Continuous Charges	5015000_	\$876,904,340
Contractual Svcs	5012000_	\$5,310,910
Equipment	5022000_	\$158,985,844
Indirect Cost	5025000_	\$3,538,433

Click on image to return



# Return and Back Buttons

**Revenue by Account Budget vs. Actual**  
ETL Run Date: 02-MAR-2017

**\$45,986,656,307**  
Budget Revenue

**\$15,307,970,880**  
Actual Revenue

% of Fiscal Year Remaining: 27.67%

View By Trellis ▼

Account Level 28 Description	Account Level 28 Code	Account Level 27 Description	Account Level 27 Code	Account Level 26 Description	Account Level 26 Code	Account Level 25 Description	Account Level 25 Code	Budget Revenue
Federal Grants	FEDERAL_GRANTS	Federal Grants	FED_GRNTS&CNTRACT	1890 Institutn Capcty Bldg Grt	4010216	1890 Institutn Capcty Bldg Grt	4010216	\$950,000
Federal Grants	FEDERAL_GRANTS	Federal Grants	FED_GRNTS&CNTRACT	21St Century	4010216	21St Century	4081297	\$19,144

Fiscal Year is equal to **2017**  
**and** Ledger Short Name is equal to / is in **ACTUALS**  
**and** Fiscal Calendar Name is equal to / is in **State Fiscal Calendar**  
**and** Account Level 29 Code is equal to / is in **REVENUES**  
**and** Account Level 28 Code is not equal to / is not in **MISC\_REVENUE**  
**and** FILTER(Budget Revenue USING Budget Ledger Short Name = 'C\_OFCREV\_B') is not null  
**or** Actual Revenue is not null

Return Back - [Print](#) - [Export](#)

Click on image to return



# End Of Appendix

Congratulations! You successfully completed the appendix section of **SW BI101: Cardinal Business Intelligence Overview** course.

To close the web based training course, click the '**X**' button in the upper right corner.